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## Unreviewed Safety Question Activity Report

2006-1



Office of Facility Safety (EH-2)

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Office of Environment, Safety and Health

January – March 2006

Helping the Field Succeed  
with  
Safe and Reliable Operations



U.S. Department of Energy

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## Introduction

The Unreviewed Safety Question (USQ) process alerts the Department of Energy (DOE) to events, conditions, or actions that are not within the DOE-approved safety basis of a facility or operation and ensures appropriate DOE line management action. Figure 1 shows the steps in the USQ process.

Part of the mission and function of the Office of Facility Authorization Bases (EH-23), which is a part of the Office of Facility Safety (EH-2), is to maintain operational awareness of the Department's USQ activities. EH-23 staff members prepare a quarterly *USQ Activity Report* showing the status of USQs across the DOE complex. To prepare the activity report and develop complex-wide statistics and insights, staff members:

- review and analyze Occurrence Reporting and Processing System (ORPS) reports on USQs identified at DOE sites,
- determine the causes of USQs related to safety basis documents, and
- maintain a USQ database for monitoring and tracking purposes.

Since 2001, EH-23 has produced more than two dozen periodic reports and catalogued 331 USQs in a database. USQs identified from January 2006 through March 2006 are summarized in the current report.

## USQ

**Unreviewed Safety Question (USQ)** means a situation where

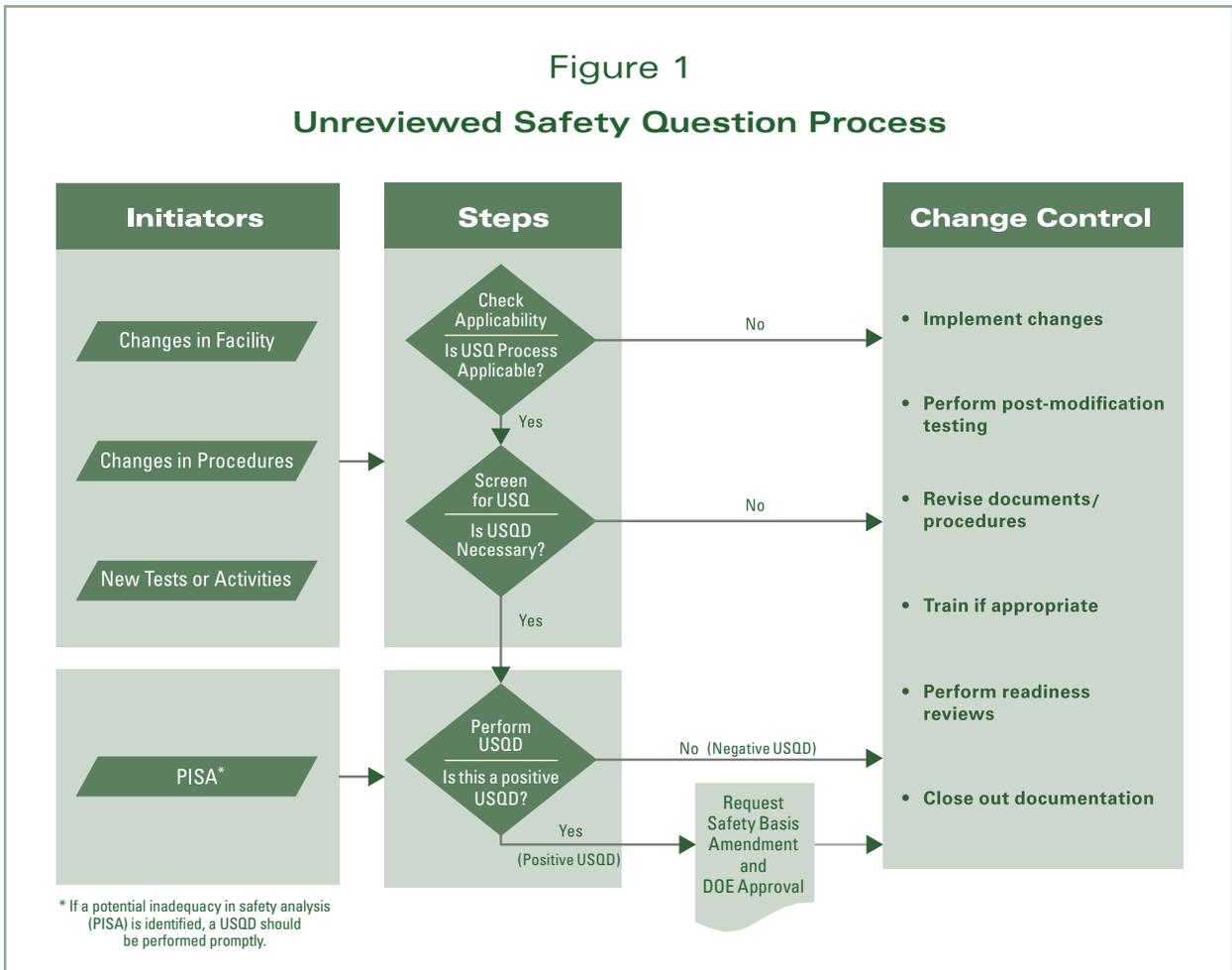
- (1) The probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased;
- (2) The possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created;
- (3) A margin of safety could be reduced; or
- (4) The documented safety analysis may not be bounding or may be otherwise inadequate.

10 CFR 830.3

The existence of a USQ does not mean that the facility or operation is unsafe. The USQ process alerts DOE to events, conditions, or actions that affect the approved facility safety basis and ensures that DOE line management takes appropriate action.



**Figure 1**  
**Unreviewed Safety Question Process**



### Purpose of the USQ Process

The Unreviewed Safety Question process means the mechanism for keeping a safety basis current by reviewing potential unreviewed safety questions, reporting them to DOE, and obtaining approval from DOE prior to taking any action addressing them.

10 CFR 830.3

The USQ process is primarily applicable to the Documented Safety Analysis (DSA). The DSA must include conditions of approval in safety evaluation reports and facility specific commitments made in compliance with DOE Rules, Orders or Policies.

DOE G 424.1-1



## Background

Requirements for USQs are detailed in Title 10, *Code of Federal Regulations* (CFR) Part 830.203, “Unreviewed Safety Question Process.” They are as follows.

1. The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility (hereafter referred to as contractor) must establish, implement, and take actions consistent with a USQ process that meets DOE requirements.
2. The contractor must implement the DOE approved USQ procedure when there is (a) temporary or permanent change in the facility, procedures, (b) test or experiment not described in the Documented Safety Analysis (DSA), or (c) a potential inadequacy of the DSA.
3. The contractor must obtain DOE approval prior to taking any action addressing any of the conditions in requirement 2 above.

DOE G 424.1-1, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements*, provides information to assist in implementation and interpretation of the Rule.

The existence of a USQ does not mean that the facility or the operation is unsafe. However, when a change is proposed or a condition is discovered that could increase the risk of operating a facility beyond what was established in the current safety basis, a potential USQ exists. The contractor then must prepare a USQD report. If the existence of USQ is confirmed, the contractor must submit the USQD report to the local DOE office, which reviews it for acceptability prior to issuing the approval, following which the safety basis document must be revised by the contractor.

## USQD Document

An **Unreviewed Safety Question Determination (USQD)** document contains the review of a change or a situation where there is reason to believe that the facility’s existing safety analysis may be in error or is otherwise inadequate. It records the scope of the determination and an explanation of the technical basis for the conclusions reached.

DOE G 424.1-1



## Background (continued)

If more USQs are identified at one facility than at another, it does not indicate that the risk from operating that facility or site is greater. In fact, identifying a USQ that originates from a PISA provides an opportunity to correct past errors and indicates thoroughness in assessing the planned changes.

DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, requires that any USQ originating from a PISA must be reported to the Department's Occurrence Reporting and Processing System (ORPS). The EH-23 USQ Activity Report is based on a review of USQ information available in the ORPS database. Any USQ that is not reportable to ORPS (as defined in DOE M 231.1-2) is outside the scope of this report. This is not a limitation because the purpose of this report is to document required improvements to existing safety basis documents.

### PISA

A **Potentially Inadequate Safety Analysis (PISA)** exists if the original analysis that supported the DOE-approved safety basis is not bounding or may be otherwise inadequate or inappropriate. The intent is to ensure that operations are conducted in a safe manner consistent with the safety basis. A PISA may result from (1) a discrepant as-found condition, (2) an operational event or incident, or (3) new information, including discovery of an error. The main consideration is that the analysis does not match the current physical configuration of the facility, or the analysis is inappropriate or contains errors.

DOE G 424.1-1

If a contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility discovers or is made aware of a potential inadequacy of the documented safety analysis, it must:

- (1) Take action, as appropriate, to place or maintain the facility in a safe condition until an evaluation of the safety of the situation is completed;
- (2) Notify DOE of the situation;
- (3) Perform a USQ determination and notify DOE promptly of the results; and
- (4) Submit the evaluation of the safety of the situation to DOE prior to removing any operational restrictions initiated.

10 CFR 830.203



## Report Preparation

The EH-23 USQ review team members search the ORPS database, collect USQ data, and enter all critical items from the ORPS report in a table (Appendix A) that is prepared for each USQ. The members then assess the completeness of the ORPS report and make related observations. All entries in Appendix A forms are obtained from ORPS reports, except the block for EH-23 Assessments. A list of positive, currently open USQs and any actions taken is maintained until the final ORPS reports are issued (Appendix B). The team members determine the cause of each USQ (as related to the safety basis documents) using the codes shown in Table 1 (see Appendix C for details). Contact with site personnel and site visits are made, as necessary, to obtain additional information and to validate the contents of the report. EH-23 presents the information in a graphical format (Figures 2, 3a, and 3b).

**Table 1**  
**Definitions of Cause Codes\***

Cause Code Description	Cause Code ID
Nonexistent Safety Document	A1
Unanalyzed Material Inventory	A2
Unanalyzed Material Properties	A3
Unaddressed Mission Change	A4
Unassessed Equipment Change	A5
Inadequate Safety System	A6
Unanalyzed Accident	A7
Lack of Depth/Details in Accident Scenario	B1
Inadequate or Flawed DSA Analysis	B2
Safety Program Deficiencies	B3
Equipment Malfunction/Failure	B4
Misapplication of DOE Standards	B5
Incorrect Accident Analysis	B6
Inadequacy of Controls	B7

\* For more details, see Appendix C.



## Summary of Results

Highlights of the positive USQDs reported from January 1, 2006, to March 31, 2006, are described below:

### Albuquerque Operations — 3 Positive USQDs

New source term information showed that the formula for ceramic material is in error (NA--LASO-LANL-TA18-2006-0001). Paint deposits on various sprinkler heads potentially rendered them incapable of activating at their rated temperature (NA--LASO-LANL-CMR-2006-0002). Discovery of degradation of a significant percentage of sprinkler heads in TA-55 due to corrosion and paint (NA--LASO-LANL-TA55-2006-0005).

### Idaho Operations — 2 Positive USQDs

Hazardous amount of flammable gas may be accumulated in partially filled containers (EM-ID--CWI-FUELCSTR-2006-005). Unacceptable amount of fuel in the packaging stand (EM-ID--CWI-FUELCSTR-2006-0004).

### Oakland Operations — 1 Positive USQD

Inadequate seismic restraints for several glove boxes (NA-LSO-LLNL-LLNL-2006-0002).

### Oak Ridge Operations — 4 Positive USQDs

Unanalyzed material inventories discovered at: C-404-low level radiological waste burial ground facility (EM-PPPO-BJC-PEDPENRES-2006-0001); Legacy Excess Uranium in X-744-G (EM--PPPO-LPP-PORTENVRES-2006-0003); X10HFIR resulting in calculational error (NE-ORO--ORNL-X10HFIR-2006-0004); and for X10 nuclear resulting in incorrect application of radioactive release (SC-ORO--ORNL-X10NUCLEAR-2006-0001).

### Richland Hanford Site — 7 Positive USQDs

Discovery of unanalyzed material properties for Bldg 242-Z filler bypass (EM-RL-PHMC-PFP-2006-0004). Unanalyzed material inventory of radioactive/hazardous material discovered related to: 3013 containers (EM-RL-PHMC-PFP-2006-0005); 118-K-1 Waste Drums (EM-RL-PHMC-REMACT-2006-0002); 118-K-1 Explosive Hazards (EM-RL-PHMC-REMACT-2006-0003); Retrieved Waste Drums (EM-RL-PHMC-SWOC-2006-0001); Safety program deficiencies related to Fixed Array Wagons were identified (EM-RL-PHMC-PFP-2006-0007); Inadequate or flawed DSA analysis in the Transportation Safety document (EM-RL-PHMC-GENSERVICE-2006-0001).

### Savannah River Site — 4 Positive USQDs

Discovery of unanalyzed material inventory related to: Control Laboratories Bldg. 772-F and 772-1F (EM-SR--WSRC-CLAB-2006-0001); Deflagration of glove boxes due to flammable liquids (EM-SR--WSRC-LTA-2006-0003); and Legacy TRU waste drums fissile content (EM-SR--WSRC-SW&I-2006-0001); Unanalyzed aircraft crash accident (EM-SR--WSRC-SW&I-2006-0004).

### Dominant Cause:

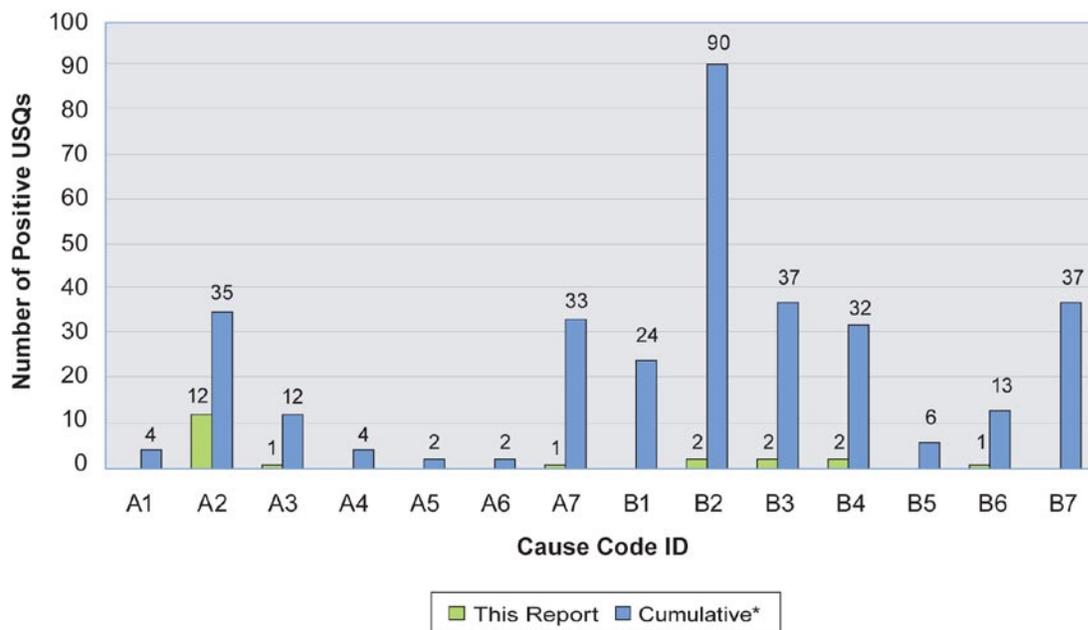
Discovery of unanalyzed material inventories.



## Results

From January through March 2006, there were 21 positive USQDs across the DOE Complex. The results of the team’s review of the USQDs are discussed below. Specific details for each USQ (in tabular form) are provided in Appendix A. Figure 2 shows USQs reported for this period and the cumulative period from March 2001 through March 2006, grouped by the cause codes defined in Table 1 (page 8). Figure 3a shows the percentages of USQs by cause code for the period of January through March 2006, and Figure 3b shows the percentages of USQs by cause code for the cumulative period of March 2001 through March 2006.

**Figure 2**  
**Grouping of USQDs by Cause Code**



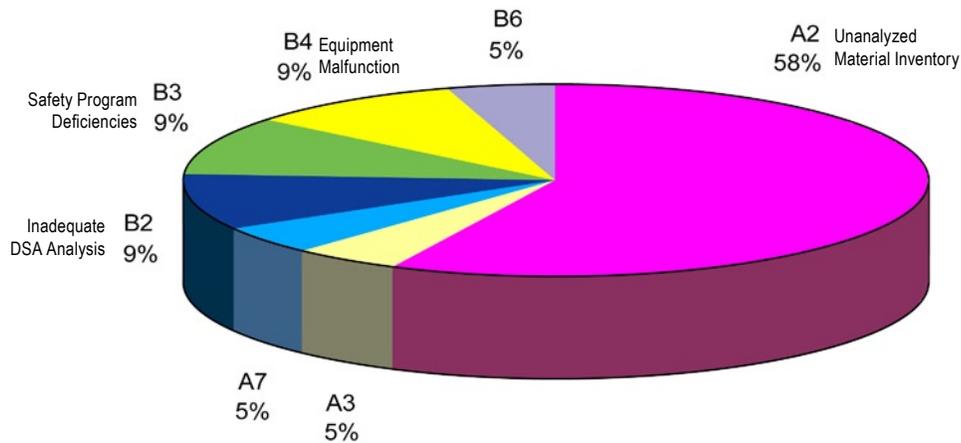
Note: For the Cause Code definitions, see Table 1 on page 8.

\* For the period from March 2001 – March 2006. The cumulative number of USQs equals 331.

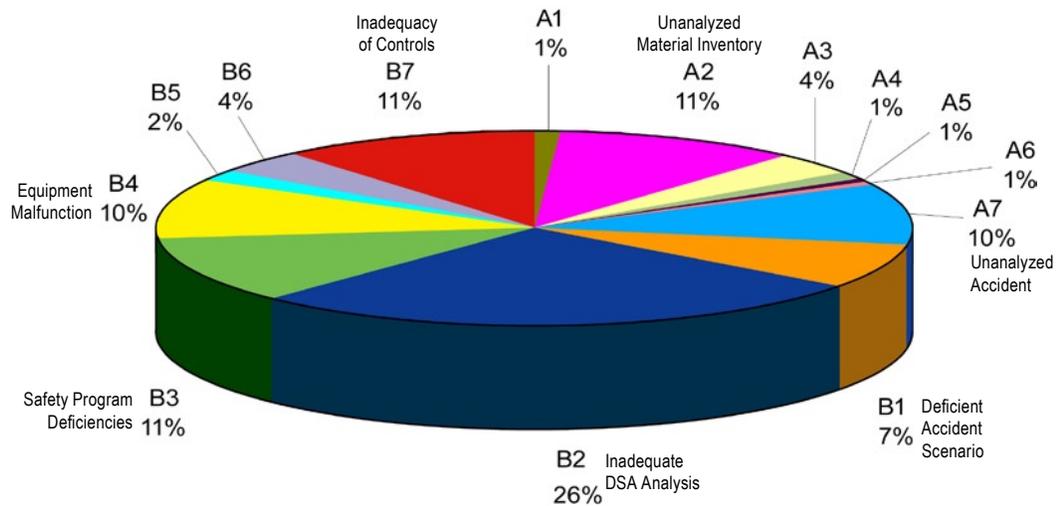


## Results (continued)

**Figure 3a**  
**Percentages of USQs by Cause Code**  
 (This Period)



**Figure 3b**  
**Percentages of USQs by Cause Code**  
 (Cumulative\*)



Note: For the Cause Code definitions, see Table 1 on page 8.  
 \* For the period from March 2001 – March 2006



## Results for the Current Period

### Albuquerque Operations — 3 Positive USQDs

Albuquerque Operations identified the following positive USQDs.

- 1 Positive USQD regarding correction to Transportation Fire Accident from BIO.  
(NA--LASO-LANL-TA18-2006-0001) *Cause: Incorrect Accident Analysis*
- 2 TSR Violation at TA-55 and Positive USQ: Sprinkler System Degradation at TA-55.  
(NA--LASO-LANL-TA55-2006-0005) *Cause: Equipment Malfunction/Failure*
- 3 Degraded Sprinkler Heads in the CMR Fire Suppression System. (NA--LASO-LANL-CMR-2006-0002)  
*Cause: Equipment Malfunction/Failure*

### Currently Open USQs

- ALO-LA-LANL-LANL-2004-0007 (April 2004), Inadequate Documented Safety Analysis Concerning Type A Designated Packaging Used for Fissile Content
- ALO-LA-LANL-TA55-2004-0009 (September 2004), Modification to TA-55 Fire Detection System Results in Positive USQ
- NA--PS-BWXP-PANTEX-2005-0142 (December 2005), Specific Surge Suppression Arrangements Found Ineffective through Testing
- NA--LASO-LANL-TA18-2006-0001 (February 2006), Positive USQD Regarding Correction to Transportation Fire Accident from BIO
- NA--LASO-LANL-TA55-2006-0005 (February 2006), TSR Violation at TA55 and Positive USQ: Sprinkler System Degradation at TA55
- NA--LASO-LANL-CMR-2006-0002 (March 2006), Positive USQ: Degraded Sprinkler Heads in the CMR Fire Suppression System



## Results for the Current Period (continued)

### Idaho Operations—2 Positive USQDs

Idaho Operations identified the following positive USQDs.

- 1 Operating the Sludge Containerization System may allow a hazardous amount of flammable gas (hydrogen) to accumulate in partially filled, undisturbed containers. (EM-ID--CWI- FUELCSTR-2006-0005) *Cause: Inadequate Safety Analysis*
- 2 The PISA concern was over batching fuel in the packaging stand resulting from accidentally spilling fuel being transported over the packaging stand or inadvertently places too much fuel in the packaging stand. (EM-ID--CWI-FUELCSTR-2006-0004) *Cause: Unanalyzed Accident*

### Currently Open USQs

- NE-ID-BBWI-ATR-2004-0004 (March 2004), Core Feedback During Loss of Commercial Power, Update 8/18/2005
- EM-ID--CWI-FUELCSTR-2006-0005 (February 2006), Possible Hydrogen Generation in HICs and During Basin Grouting, Update 2/22/2006
- EM-ID--CWI-FUELCSTR-2006-0004 (February 2006), CPP-666 Controls on Fuel Handling and Repackaging Stand Use, Update 2/14/2006

### Oakland Operations — 1 Positive USQD

Oakland Site Office identified the following positive USQD.

- 1 Glove boxes are seismically inadequately restrained. (NA-LSO-LLNL-LLNL-2006-0002) *Cause: Safety Program Deficiency*

### Currently Open USQ

- NA-LSO-LLNL-LLNL-2004-0053 (October, 2004), Potential Inadequacy in the Bldg. 332 Safety Analysis – Failure to Surveil Two Check Valve in the Emergency Water Supply System



## Results for the Current Period (continued)

### Oak Ridge Operations — 4 Positive USQDs

Oak Ridge Operations identified following positive USQDs.

- 1 Final positive USQ concerning the C-404 low-level radiological waste burial ground facility. (EM--PPPO-BJC-PGDPENVRES-2006-0001) *Cause: Unanalyzed Material Inventory*
- 2 Final positive USQ on legacy excess uranium inventory in X-744G. (EM--PPPO-LPP-PORTENVRES-2006-0003) *Cause: Unanalyzed Material Inventory*
- 3 Final calculational error results in positive USQ. (NE-ORO--ORNL-X10HFIR-2006-0004) *Cause: Unanalyzed Material Inventory*
- 4 Final incorrect application of Radioactive Release Modeling used in DOE-STD-1027-92 (SC-ORO--ORNL-X10NUCLEAR-2006-0001) *Cause: Unanalyzed Material Inventory*

### Currently Open USQs

- EM-ORO--BJC-X10WSTEMRA-2005-0007. As-Found Radiological Condition in ORNL Buildings 3029 and 3026D Affecting Characterization
- EM-ORO--BJC-K25ENVRES-2005-0031. Potential Inadequate Safety Analysis Associated with the Relocation of Tenant Operations
- EM-ORO--BJC-X10WSTEMRA-2005-0010. Potential USQ Concerning the Analysis of a Container Deflagration Event in Bechtel Jacobs Company (BJC) Transuranic (TRU) Storage Facilities
- EM-ORO--FWEC-TRUWPFAC-2005-0002. Pressurized Gas Cylinders Used in HSGS Analysis of Waste Drums not Included in Safety Analysis



## Results for the Current Period (continued)

### Richland Hanford Site — 7 Positive USQDs

Richland Hanford identified the following positive USQDs.

- 1 Positive USQ in the Transportation Safety Document. (EM-RL-PHMC GEN SERVICE -2006-0001)  
*Cause: Inadequate or Flawed DSA Analysis*
- 2 Plugged vent filters may invalidate accident analysis for Bldg 242-Z. (EM-RL-PHMC-PFP 2006-0004)  
*Cause: Unanalyzed Material Properties*
- 3 Under-estimation of dose consequences for accidents in 2736-Z Safety Basis stored in 3013 containers. (EM-RL-PHMC-PFP-2006-0005) *Cause: Unanalyzed Material Inventory*
- 4 Configuration of BTC/3013 container storage in fixed array wagons not properly analyzed in Safety Basis. (EM-RL-PHMC-PFP-2006-0007) *Cause: Safety Program Deficiencies*
- 5 Positive USQ at 118-K-1 for handling drummed waste. (EM-RL-PHMC-REMACT-2006-0002)  
*Cause: Unanalyzed Material Inventory*
- 6 Positive USQ at 118-K-1 for exposure hazards. (EM-RL-PHMC-REMACT-2006-0003) *Cause: Unanalyzed Material Inventory*
- 7 Positive USQ related to volatile organic compounds in retrieved waste drums. (EM-RL-PHMC-SWOC-2006-0001) *Cause: Unanalyzed Material Inventory*

### Currently Open USQs

- EM-RL-PHMC-REMACT-2006-0002 (March 2006), Positive Unreviewed Safety Question at 118-K-1 for Handling Drummed Waste
- EM-RL-PHMC-REMACT-2006-0003 (March 2006), Positive Unreviewed Safety Question at 118-K-1 for Exposure Hazards
- EM-RL-PHMC-SWOC-2006-0001 (March 2006), Positive Unreviewed Safety Question Related to Volatile Organic Compounds in Retrieved Waste Drums



## Results for the Current Period (continued)

### Savannah River Site — 4 Positive USQDs

Savannah River Site identified the following positive USQDs.

- 1 The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in glove boxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glove box had not been determined. (EM-SR--WSRC-CLAB-2006-0001) *Cause: Unanalyzed Material Inventory*
- 2 The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in glove boxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glove box had not been determined. On 2/8/06 positive USQ SRT-USQ-06-0020 was issued. (EM-SR--WSRC-LTA-2006-0003) *Cause: Unanalyzed Material Inventory*
- 3 On 1/31/06 a transuranic waste drum containing 681 grams equivalent Pu-239 dated 1980 was discovered in storage in a category III facility (maximum allowed is 485 grams). The drum also was not stored with spacing required for the Pu-239 content. On April 18, 2006 a second drum containing 1156 equivalent grams of Pu-239 was discovered, also improperly stored. (EM-SR--WSRC-SW&I-2006-0001) *Cause: Unanalyzed Material Inventory*
- 4 The facility accident analysis did not consider the potential for a small aircraft crash, which does not comply with the requirements of DOE-STD-3014.96. (EM-SR--WSRC-SW&I-2006-0004) *Cause: Unanalyzed Accident*

### Currently Open USQ

- SR--WSRC-WVIT-2005-0019 (September 2005), Positive Unreviewed Safety Question Declared Due To Use of Non-Conservative H2 Generation Rate



## Glossary

**Code of Federal Regulations (CFR)** The codification of the general and permanent rules published in the *Federal Register* by the executive departments and agencies of the Federal Government. The Code is divided into 50 titles that represent broad areas subject to Federal regulation. Title 10 is *Energy*, and 10 CFR 830 contains rules for nuclear safety management.

**Documented Safety Analysis (DSA)** Analysis that defines the extent to which a nuclear facility can be operated while ensuring the safety of workers, the public, and the environment. The document includes a description of conditions, boundaries of operations, and hazard controls.

**Occurrence Reporting and Processing System (ORPS)** A database used to document daily operational occurrences at all DOE sites.

**Potentially Inadequate Safety Analysis (PISA)** A condition that exists if the original analysis that supported the DOE-approved safety basis is not bounding or may be otherwise inadequate or inappropriate. A PISA may result from a discrepant as-found condition, an operational event or incident, or new information, including discovery or error. The main consideration is that the analysis does not match the current physical configuration of the facility, is inappropriate, or contains errors. The intent is to ensure that operations are conducted in a safe manner consistent with the approved safety basis.

**Safety Basis** Documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated in a manner that adequately protects workers, the public, and the environment. Safety Basis is a subset of **Authorization Basis** in that the Authorization Basis may include corporate operational and environmental requirements.

**Unreviewed Safety Question (USQ)** means a situation where (1) the probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased; (2) the possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; (3) a margin of safety could be reduced; or (4) the documented safety analysis may not be bounding or may be otherwise inadequate.

**USQ Determination (USQD) Document** A USQ Determination document contains the review of a change or situation where there is reason to believe that the facility's existing safety analysis may be in error or is otherwise inadequate. The Code of Federal Regulations requires that USQ evaluations be documented, including recording the scope of the determination and the technical basis for concluding that an unreviewed safety question does, indeed, exist.



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## **Appendix A**

### Summary Descriptions of USQs for the Reporting Period

(The USQs in this appendix are arranged by sites and their facilities.)

ORPS ID Status	NA—LASO-LANL-TA55-2006-0005	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B4.i
Title	TSR Violation at TA-55 and Positive USQ: Sprinkler System Degradation at TA-55			Date and Time Discovered		02/24/2006 08:00 (MTZ)			
Site/Facility	Los Alamos National Laboratory / Plutonium Processing and Handling Facility			DOE Secretarial Office		National Nuclear Security Administration			
Facility Manager Phone	Stuart McKerran (505) 667-7501			Local DOE Contact Phone		Not provided			
Originator Phone	Mark W. Hunsinger (505) 665-1496			Contractor		Los Alamos National Laboratory			
<p><b>Description:</b>  Laboratory personnel declared a Potential Inadequacy to the documented Safety Analysis after discovering a discrepant condition involving degradation of a significant percentage of the fire suppression sprinkler heads in the Technical Area 55, Plutonium processing and Handling Facility (TA-55-4). Inspection results of the fire suppression sprinklers at the Chemistry and Metallurgy Research (CMR) Building indicated similar issues. Specifically, the degradation involved corrosion and paint on approximately 5% to 60% of the sprinkler heads (depending upon the facility/room) of the Safety Significant fire suppression sprinkler system.</p>									
<p><b>Contractor Action:</b>  Fire watches were initiated and a Limited Condition of Operation was entered at both TA-55-4 and CMR. In addition, both facilities have suspended programmatic operations and spark/flame-producing work, pending further evaluation.</p> <p>The LANL fire marshal has sent out an urgent notice to other Laboratory facilities informing them of the problem and providing the requirements for annual sprinkler inspections.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Replacement of degraded sprinklers. No schedule is provided.</p>			
<p><b>DOE Field Office Action:</b>  Not provided.</p>						<p><b>All CA Status:</b>  Check progress of further evaluation and sprinkler head replacement.</p>			
<p><b>EH-23 Assessment:</b> Cause: B4, Equipment malfunction/failure.</p>									

ORPS ID Status	NA—LASO-LANL-CMR-2006-0002	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B4.i
Title	Positive USQ; Degraded Sprinkler Heads in the CMR Fire Suppression System			Date and Time Discovered		03/07/2006 12:00 (MTZ)			
Site/Facility	Los Alamos National Laboratory Chemistry & Metallurgy Research			DOE Secretarial Office		National Nuclear Security Administration			
Facility Manager Phone	Paul Sasa (505) 667-3537			Local DOE Contact Phone		Not provided			
Originator Phone	Mark W. Hunsinger (505) 665-1496			Contractor		Los Alamos National Laboratory			
<b>Description:</b> The Chemistry & Metallurgy Research (CMR) Building Operations Manager was informed that the result of a USQD for a degraded fire suppression system (sprinkler heads) was positive. This event was previously identified in ORPS Report NA—LASO-LANL-TA55-2006-0005. The discovery of paint deposits on various CMR sprinkler heads was judged by the Laboratory's Fire Marshal to potentially render them incapable of activating at their rated temperature.									
<b>Contractor Action:</b> CMR terminated normal operations in the rooms in Wings 2, 3, 4, 5, 7, and 9 which were found to have questionable sprinkler heads, entered the appropriate Limiting Conditions of Operation (LCOs) action statements, and fire watches were initiated in the affected areas.  A plan was developed to replace the degraded sprinkler heads according to priority of work in the affected areas.							<b>Safety Basis Document Corrective Actions (CA):</b> None.		
<b>DOE Field Office Action:</b> Not provided.							<b>All CA Status:</b> EH-23 will follow up on the status of replacement of the potentially degraded sprinkler heads.		
<b>EH-23 Assessment:</b> Cause: B4 – Equipment malfunction/failure									

ORPS ID Status	NA—LASO-LANL-TA18-2006-0001 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B6.i(a)
Title	Positive USQ-D regarding correction to Transportation Fire Analysis from BIO			Date and Time Discovered		02/08/2006 17:00 (MTZ)			
Site/Facility	Los Alamos National Laboratory Pajarito Laboratory			DOE Secretarial Office		National Nuclear Security Administration			
Facility Manager Phone	Pat Volza (505) 667-5434			Local DOE Contact Phone		Not provided			
Originator Phone	Joseph B. Richardson (505) 665-4844			Contractor		Los Alamos National Laboratory			
<p><b>Description:</b>  The TA-18 Operations Manager identified a positive USQ related to discrepancies in the TA-18 Basis for Interim Operation transportation fire accident. The USQ involves new source term calculation information, which determined that the formula for ceramic material is in error. These errors affect the vehicle accident-fire suppressed and vehicle accident-no fire (spill) scenarios. The Operations Manager has determined that the existing Administrative Control requiring robust containers for Material-At-Risk ensures safety to the public and to workers, and is adequate for continued operation.</p>									
<p><b>Contractor Action:</b>  The findings are being reviewed. Continuation of operation is considered safe.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Target date for completion of evaluation of the findings was extended to 04/21/2006. However, no update of ORPS report is found.</p>			
<p><b>DOE Field Office Action:</b>  Not provided.</p>						<p><b>All CA Status:</b>  EH-23 will follow up on the findings of the incident evaluation.</p>			
<p><b>EH-23 Assessment:</b> Cause: B6 – Incorrect Accident Analysis</p>									

ORPS ID Status	EM-ID--CWI-FUELRCTR-2006-0005 / Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B2.xi
Title	Possible Hydrogen generation in HICs and During Basin Grouting			Date and Time Discovered		02/22/2006 17:28 (MTZ)			
Site/Facility	Idaho National Laboratory/ ICPP Fuel Receipt & Storage Act.			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	Andrea M. Beckwith (208) 526-1160			Local DOE Contact Phone		Hugo, Karl, DOE-ID			
Originator Phone	Annette W. Gerdes 208) 526-3100			Contractor		CH2M*WG Idaho, LLC			
<b>Description:</b>									
<p>The K-Basin Closure Project (similar to the CPP-603 closure) Plant Review Committee declared a positive USQ regarding the suspension of sludge retrieval activities in the 105 KE Basin. Not operating the Sludge Containerization System may allow a hazardous amount of flammable gas (hydrogen) to accumulate in partially filled, undisturbed containers. Report number EM-RL-PHMC-SNF-2005-0020 from the DOE Occurrence Reporting and Processing System discussed the possibility of pressurizing sludge/grout drums with hydrogen.</p> <p>Prompted by this information, an Engineering Design File (EDF-6677) was drafted to see if the CPP-603 sludge solidification process, as well as the grouting of the CPP-603 basins, might involve similar chemistry and, therefore, have similar issues with hydrogen generation.</p> <p>Hydrogen generation during grouting of HICs or grouting the basins is not addressed in SAR-116. The draft EDF-6677 indicates that hydrogen generation in sufficient quantities to pose a hazard is a possibility. This hazard needs to be addressed in the safety basis and additional controls may be needed.</p> <p>On 3/2/2006, at 1630 hours, a positive Unreviewed Safety Question (USQ) was received for the potential inadequacy in safety analysis (PISA). The USQ identified that the potential for the creation hydrogen during grouting of High Integrity Containments (HICs)/basins may increase both the probability of occurrence and the consequences of a fire/explosion accident.</p>									
<b>Contractor Action:</b>							<b>Safety Basis Document Corrective Actions (CA):</b>		
<ol style="list-style-type: none"> <li>1. Addition of grout to HIC's and moves of all HIC's are on hold pending evaluation.</li> <li>2. Barriers were established to prevent access to the HICs.</li> </ol> <p>Eight corrective actions (CAs) have been formulated. The Safety Basis Documents related CAs are noted here.</p>							<p>CA 7, Nuclear safety analysis will implement improvements to assure adequate communication between work groups by using the Consolidated Hazards Analysis Process (CHAP) or other acceptable method. This CA addresses the cause code A4B5CO4.</p> <p>CA 8, Assess the effectiveness of the corrective actions implemented to improve performance in the preparation of safety analyses. This will be done to determine the effectiveness of the corrective actions to prevent recurrence. after all other corrective actions for this issue are completed.</p>		
<b>DOE Field Office Action:</b>							<b>All CA Status:</b>		
<p>Facility Representative Input: Multiple comments throughout the document. Description of cause inadequate. corrective actions inadequate.</p>							<p>The CA8 completion scheduled for 11-09-06,</p>		
<b>EH-23 Assessment:</b> Cause: Inadequate or flawed DSA Analysis. A conservative position is taken but DOE-ID should specifically address the adequacy of the corrective actions and their completions.									

ORPS ID Status	EM-ID--CWI-FUELCSTR-2006-0004, Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A7
Title	CPP-666 Controls on Fuel Handling and Repackaging Stand Use			Date and Time Discovered	02/14/2006 15:53 (MTZ)				
Site/Facility	Idaho National Laboratory/ ICPP Fuel Receipt & Storage Act			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	Andrea M. Beckwith (208) 526-1160			Local DOE Contact Phone	J. McNew, DOE-ID Not available				
Originator Phone	Stacey B. Schmier (208) 526-3100			Contractor	CH2M*WG Idaho, LLC				
<b>Description:</b>									
<p>CPP-666 is an active spent nuclear fuel wet storage facility, located within the boundaries of the INTEC facility.</p> <p>On 2/22/06, at 0834 hours, a positive Unreviewed Safety Question (USQ) was received for potential inadequacy in safety analysis (PISA). The PISA concern was over batching fuel in the packaging stand resulting from accidentally spilling fuel being transported over the packaging stand or inadvertently placing too much fuel in the packaging stand. The types of accidents associated with these events are dropping fuel into the packaging stand and inadvertent criticality during fuel receipt, handling, and storage operations. Since none of the accident scenarios specifically addresses dropping fuel into the packaging stand while it contains fuel, this is considered an accident of a different type than previously evaluated in the safety basis. Upon receiving the positive USQ on 2/22/2006, at 0834 this event was upgraded to a significant category 2.</p>									
<b>Contractor Action:</b>							<b>Safety Basis Document Corrective Actions (CA):</b>		
<p>All fuel handling operations at CPP-666 are suspended.</p> <p>CA 1, Perform a formal cause analysis.</p> <p>CA 2, Develop a corrective action plan based on the formal cause analysis.</p> <p>CA 3, Perform a review to determine whether the subject nuclear safety noncompliance should have reasonably been identified through implementation of the contractor's assessment program.</p> <p>CA 4, Perform an extent of conditions review to identify potential site-wide issues.</p> <p>Total of 11 corrective actions</p>							<p>CA 11, As specified in the ESS-FSA-3, Follow-on Actions, "Conduct a detailed process evaluation of all fuel movement activities in the FSA pool using a disciplined methodology to assure that the work scope needed to support mission commitments is described, associated hazards identified and analyzed, and the required controls developed. SAR-113 and TSR-113 will then be revised to implement the results of this review. This assessment must be completed and SAR-113 and TSR-113 revisions submitted to DOE-ID within six months after approval of this ESS."</p>		
<b>DOE Field Office Action:</b>							<b>All CA Status:</b>		
<p><b>Facility Representative Input:</b> Multiple comments through the document. corrective actions are inadequate.</p> <p>Entered by: HUGO KARI .I</p>							<p>CA-10 is scheduled for completion on 11-09-06.</p>		
<b>EH-23 Assessment:</b> Cause: Unanalyzed accident. Satisfactory conservative action has been taken but the adequacy of the corrective actions should be specifically be determined by DOE-ID.									

ORPS ID Status	NA--LSO-LLNL-LLNL-2006-0002	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B3.i-viii
Title	Discrepant-as-Found Condition - Glove boxes Inadequately Seismically Restrained			Date and Time Discovered		01/23/2006 11:00 PTZ			
Site/Facility	LLNL/B332			DOE Secretarial Office		National Nuclear Safety Administration (NNSA)			
Facility Manager Phone	Mark Martinez (925) 423-7572			Local DOE Contact Phone		Andy Delapaz (925) 424-3308			
Originator Phone	Barbara Eccher, (925) 422-9332			Contractor		University of California			
<b>Description:</b> On 1-23-06, Facility Management determined that a discrepant-as-found condition exists in Building 332 (B##@) relative to the seismic restraints on six glove boxes. Several glove boxes were suspended to have inadequate seismic restraints with either the anchors, glove box stand or glove box-to-stand anchors. Calculations were performed to confirm that the hardware was inadequate.									
<b>Contractor Action:</b> Glove box operations in the subject boxes are suspended until further evaluation. The facility will follow the LLNL-approved procedure for positioning a Discrepant-as Found Condition, including preparing a USQD and an Evaluation of Safety of the situation.						<b>SBD Corrective Actions (CA):</b> To be developed <b>Is Further Evaluation Required?:</b> Yes If YES - Before Further Operation? Yes By whom? Roger Rocha By when? 05/28/2006			
<b>DOE Field Office Action: HQ Summary:</b> The glove boxes were suspected to have inadequate seismic restraints regarding either the anchors, the glove box stand, or the glove box-to-stand anchors.						<b>All CA Status:</b>			
<b>EH-23 Assessment:</b> Cause: safety program deficiency._Continue following the incident including the ORPS updates and USQD.									

ORPS ID Status	EM-PPPO-LPP-PORTENVRES-2006-0003 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Positive USQ on Legacy Excess Uranium Inventory in X-744G		Date and Time Discovered		03/13/2006 16:00 (ETZ)				
Site/Facility	Paducah Gaseous Diffusion Plant/ ER		DOE Secretarial Office		Environmental Management				
Facility Manager Phone	Paul Kreitz, Parallax Portsmouth Project Manager (740) 897-4568		Local DOE Contact Phone		Dee Perkins, DOEPORTS				
Originator Phone	Jacqueline G. Book/Quality Programs Coordinator (740) 897-2569		Contractor		Bechtel Jacobs Company, LLC				
<b>Description:</b>									
<p>This Occurrence is a legacy issue from the previous Prime Contractor.</p> <p>In preparation for implementing the new Documented Safety Analysis (DSA), current facility uranium inventories were being compared to the limits imposed by the Technical Safety Requirements (TSR). During this process, it was noted that the Nuclear Material Control &amp; Accountability (NMC&amp;A) database reflected a higher uranium inventory than was used in the Preliminary Hazards Analysis (PHS) screening for X-744G. The PHS forms the basis for the new DSA. Upon further investigation, it was discovered that nearly 1600 containers of UO3 had been received from Fernald in 2002 without updating the PHS. Additionally, much of this material receipt had not been evaluated through the Unreviewed Safety Question Determination (USQD) process.</p> <p>As a result, LATA/Parallax, Portsmouth, LLC. (LPP) conducted a USQD on this "as-found condition" against the 1997 Safety Analysis Report (SAR), which is the current safety analysis document. While the 1997 SAR does not have a uranium inventory limit, one could not clearly ensure that the bounding accident would remain the same when considering the added uranium inventory in X-744G. This uncertainty resulted in a positive USQD.</p>									
<b>Contractor Action:</b>						<b>Safety Basis Document Corrective Actions (CA):</b>			
<p>ACOMPENSATORY ACTIONS:</p> <ul style="list-style-type: none"> <li>--Prohibited the addition of any uranium to X-744G until approved by DOE;</li> <li>--Implemented the Administrative Controls for Fire Protection in X-744G:</li> <li>* Maintain the X-744G Bldg. sprinkler System functional</li> <li>* Only diesel, or electric, forklifts shall be permitted within the X-744G</li> <li>* Diesel forklifts shall be stored within approved areas</li> <li>* No containers bearing uranium material shall be stored in the X-744G diesel forklift storage area.</li> </ul> <p>ADDITIONAL ACTIONS:</p> <ul style="list-style-type: none"> <li>--Initiated a Justification for Continued Operation (JCO);</li> <li>--Initiated an Occurrence Report; and</li> <li>--Held a Critique.</li> </ul>						<p>Generate a Justification for Continued Operation to the DOE which evaluates the safety impact of the increased inventory. Action has been completed. Target Completion Date: 03/24/2006</p> <p>The 744G PHS, X-744G HA, LPP CAT 2 DSA/TSR with new X-744G inventory as part of the CAT 2 DSA Annual Update package submitted to DOE.</p> <p>Action has been completed.</p> <p>Conduct an endpoint assessment of Facility Manager Inventory Reports.</p>			
<b>DOE Field Office Action:</b>						<b>All CA Status:</b>			
<p>There was no Facility Manager Qualification process, nor was there a single point of accountability for X-744G inventory changes. Now Inventory control has been implemented.</p>						<p>Verify the corrective actions</p>			
<b>EH-23 Assessment:</b> Cause: A2, unanalyzed material inventory. Higher than assumed inventory of Uranium found; additional analysis required.									

ORPS ID Status	ORO--ORNL-X10NUCLEAR-2006-0001 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Incorrect Application of Radioactive Release Modeling Used in DOE-STD-1027-92 FROM ITEM 1 ORPS REPORT			Date and Time Discovered		01/30/2006 16:43 (ETZ)			
Site/Facility	ORNL nuclear Complex/BOP			DOE Secretarial Office		Science			
Facility Manager Phone	Michael J. Pierce, NNFD Facilities Manager (865) 576-9193			Local DOE Contact Phone		Johnny Moore			
Originator Phone	Andrea F. Hobbs, Reporting Manager (865) 574-0812			Contractor		Oak Ridge National Laboratory			
<b>Description:</b>									
<p>On January 30, 2006, following a review of the Bldg. 2026 Safety Analysis Report (SAR), it was discovered that the SAR was incorrect in application of the radioactive-material-release modeling that is used in DOE Standard #DOE-STD-1027-92. A distance of "slightly less than 300 meters" underlies the DOE's model used for a dose of 1 rem in the Standard's determination of Nuclear Hazard Category 2 threshold quantities. However, the Bldg. 2026 SAR applied the Standard with an understanding that its basis was a dose of 1 rem at 100 meters (a value also found in the DOE Standard). The distance to the site boundary from Bldg. 2026 is approximately 165 meters. This application in the SAR was determined to constitute a potentially inadequate safety analysis (PISA).</p> <p>On February 2, 2006, a review of the SAR for Bldg. 5505 (Transuranic Research Laboratory) determined that the previously-identified misapplication also exists in the SAR for Bldg. 5505. A review of all other nuclear-facility SARs confirmed that this inadequacy only exists in the SARs for Bldg. 2026 and Bldg. 5505.</p>									
<b>Contractor Action:</b>						<b>Safety Basis Document Corrective Actions (CA):</b>			
<p>A critique was conducted with NNFD and DOE personnel at 1200 hours on January 31, 2006. The following restrictions were placed on Bldg. 2026 operations:</p> <p>1. Facility access will continue to be restricted by the facility manager through the use of the facility badge-reader system. 2. No hot work activities (welding, burning, grinding) will be performed within the facility foot print without a firewatch. 3. No operations will be performed in the hot cell except for waste-disposal activities. These restrictions will provide additional control of activities in order to minimize the potential for fire in the facility. In addition, the natural-gas supply to the Bldg. 2026 facility has been isolated outside of the facility. On February 2, identification of the potential inadequacy in the Bldg. 5505 SAR and a follow-up critique was conducted at 1300 hours.</p>						<p>Generate a Justification for Continued Operation to the DOE which evaluates the safety impact of the increased inventory. Action has been completed. Target Completion Date: 03/24/2006</p> <p>The 744G PHS, X-744G HA, LPP CAT 2 DSA/TSR with new X-744G inventory as part of the CAT 2 DSA Annual Update package submitted to DOE. Action has been completed. Conduct an endpoint assessment of Facility Manager Inventory Reports.</p>			
<b>DOE Field Office Action:</b>						<b>All CA Status:</b>			
<p>There was no Facility Manager Qualification process, nor was there a single point of accountability for X-744G inventory changes. Now Inventory control has been implemented.</p>						<p>Verify the corrective actions</p>			
<b>EH-23 Assessment:</b> Cause: A2, unanalyzed material inventory. The material inventory can be more than that derived erroneously using the DOE Standard 1027 criteria. Admin. Controls now restrict inventory, so that only low consequences are possible.									

ORPS ID Status	EM--PPPO-BJC-PGDPENVRES-2006-0001 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Positive Unreviewed Safety Question (USQ) Concerning the C-404 Low-level Radiological Waste Burial			Date and Time Discovered		01/19/2006 10:00 (ETZ)			
Site/Facility	Paducah Gaseous Diffusion Plant/ ER			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	Jim Kannard (270) 441-5030			Local DOE Contact Phone		Greg Bazzell, DOE			
Originator Phone	Jennie P. Henson (270) 441-5192			Contractor		Bechtel Jacobs Company, LLC			
<p><b>Description:</b>  The C-404 Burial Ground facility categorization as Radiological for nuclear concerns was based on the facility meeting the terms and conditions of an Inactive Waste Site (IWS). During the preparation of a Hazard Assessment Document (HAD) for the facility, the Nuclear Criticality Safety (NCS) review of the draft HAD identified potentially fissile (PF) materials in some of the drums buried in the facility. These materials were not considered fissile when the facility was categorized as an IWS in 2003. Subsequent information on these materials brought into question the validity of the methods used in determining the assay of such materials. As the determination of these items being fissile would invalidate the categorization of the facility, a Potentially Inadequate Safety Analysis (PISA) condition was declared for the facility.</p> <p>An Unreviewed Safety Question Determination (USQD) was performed to evaluate the PISA condition at the C-404 Facility. The USQD was positive since the discovery has the potential to result in new accident types for the facility. In addition, the discovery results in the possibility of a reduction in the safety margin of the facility as implied by the facility hazard categorization. The occurrence reporting criteria has been updated in this report to reflect the positive USQD.</p>									
<p><b>Contractor Action:</b>  Anomalous condition postings were established by the Facility Manager utilizing the contamination boundary surrounding the facility in order to control access as required by BJC Nuclear Criticality Safety procedure BJC-NS-1003.  A document search was initiated to determine whether or not these items are in fact fissile.</p> <p>There is currently no work being conducted at the C-404 Burial Ground Facility other than surveillance and maintenance required under the facility RCRA closure document; therefore, compensatory measures are not applicable. The safety basis documents for the facility are currently being revised.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Evaluation of the PISA condition resulted in a positive USQD for the facility. Determine from evaluation of data whether materials buried at C-404 require control under the Nuclear Criticality Safety (NCS) Program and generate appropriate NCS documentation. Target Completion Date: 09/13/2006</p> <p>Develop a Hazard Assessment Document for the C-404 Burial Ground facility.  Target Completion Date: 09/27/2006</p>			
<p><b>DOE Field Office Action:</b>  To ensure the categorization of other facilities are adequate, reviews of historical data for other PGDP Industrial Facilities is underway.</p>						<p><b>All CA Status:</b>  Verify the corrective actions when completed</p>			
<p><b>EH-23 Assessment:</b> Cause: A2, unanalyzed material inventory. Discovery of fissile inventory, requires additional analysis.</p>									

ORPS ID Status	NE-ORO--ORNL-X10HFIR-2006-0004 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Calculational Error Results in Positive USQ			Date and Time Discovered		01/24/2006 13:30 (ETZ)			
Site/Facility	Oak Ridge National Laboratory/HFIR			DOE Secretarial Office		Nuclear Energy			
Facility Manager Phone	D.J. Newland Facility Manager/Division Director (865) 574-1301			Local DOE Contact Phone		Doug Reed/ not available			
Originator Phone	Janet H. Swenson or Assistant (865) 576-4943			Contractor		Oak Ridge National Laboratory			
<p><b>Description:</b>  On January 17, 2006 during review of the latest High Flux Isotope Reactor (HFIR) Safety Analysis Report Update (USAR), several issues related to the primary heat exchanger tube rupture sequence evaluated in Section 15.3.6.2.b of the HFIR USAR and supporting calculations were identified. These comments were forwarded to the preparer of calculation C-HFIR-92-046, "Source Term Determination of Heat Exchanger Tube Rupture Transient at the HFIR," for review. On January 23, 2006, the preparer of the subject calculation documented the results of this review with the conclusion that: "... a reasonable possibility exists that a non-conservative error is contained in the release rate to the atmosphere off of the cooling towers."</p> <p>The subject 1992 calculation conservatively assumed a level of fission products present in the primary coolant system which exceeded the level that would result in a reactor shutdown. The calculation also conservatively assumed there was a simultaneous heat exchanger tube rupture. An error existed in the computer model used to predict the rate at which fission products could be released to the environment given these circumstances. A preliminary re-evaluation concluded that with the error corrected, there was an increase in off-site doses. Therefore, on January 31, 2006, the determination was made that an Unreviewed Safety Question (USQ) existed.</p>									
<p><b>Contractor Action:</b>  The facility is already shut down so no further actions are necessary to place the facility in a safe condition.</p> <p>An evaluation was initiated to determine if the PISA constitutes an Unreviewed Safety Question (USQ).</p> <p>UPDATE 1/31/06: USQD-D-HFIR-2006-0004 results indicate a positive USQ.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  1. Revise calculation C-HFIR-92-046, "Source Term Determination of Heat Exchanger Tube Rupture Transient at the HFIR," to correct the error in the fission products release rate computer model and to incorporate modifications to calculation assumptions. Target Completion Date: 10/31/2006 Complete the PISA/USQ process for errors identified in the second check of locally-developed computer models. Target Completion Date: 10/31/2007.</p>			
<p><b>DOE Field Office Action:</b>  TA preliminary re-evaluation of the subject calculation concluded that with the error corrected, there was an increase in off-site doses. Therefore, the determination was made that an Unreviewed Safety</p>						<p><b>All CA Status:</b>  Verify the corrective actions when completed</p>			
<p><b>EH-23 Assessment:</b> Cause: A2, unanalyzed EH material inventory. Greater radioactivity release possible in the postulated accident. Accident scenario was not analyzed correctly.</p>									

ORPS ID Status	EM-RL-PHMC-GENSERVICE -2006-0001	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B2.vi
Title	Positive Unreviewed Safety Question in the Transportation Safety Document			Date and Time Discovered		1/05/06 11:20 (PTZ)			
Site/Facility	Hanford Site/100 and 200 Areas			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	Rhonda R. Connolly (509) 373-4328			Local DOE Contact Phone		D. H. Splett (509) 373-7827			
Originator Phone	M. Elizabeth Poole (509) 373-0522			Contractor		Project Hanford Management			
<p><b>Description:</b> A Potential Inadequacy in the Safety Analysis was declared after facility personnel discovered that the frequency analyses for two drum shipment payloads (Payloads 5 and 6) in the 100 and 200 Areas were based on the wrong Transportation Safety Document's bounding frequency values. Subsequently, appropriate compensatory measures were taken and an Unreviewed Safety Question Evaluation was initiated and determined to be positive.</p>									
<p><b>Contractor Action:</b> Complete USQ determination. The two corrective actions due by this date have been satisfactorily completed. Discussion with the RL program and FH indicate that a suitable path forward is in place to effect a permanent remedy. Letter FH-0600286, dated 1-30-06, Submittal of Positive Unreviewed Safety Question For Transportation, HNF-2209, describes the immediate and long term actions to be taken by FH to correct this issue.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b> CARF 20060035 assigned. Some actions completed. Remainder will be done by end of calendar year. Much of the actual work involves document reviews and consistency checks with similar documents.</p>			
<p><b>DOE Field Office Action:</b> RL will revise the Safety Evaluation Report. as appropriate.</p>						<p><b>All CA Status:</b> Due to be completed 12/06.</p>			
<p><b>EH-23 Assessment:</b> Cause: Inadequate or flawed DSA analysis.</p>									

ORPS ID Status	EM-RL-PHMC-PFP-2006-0004 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A3
Title	Plugged Vent Filters May Invalidate Accident Analysis for Bldg 242-Z			Date and Time Discovered		2/07/06 12:00 (PTZ)			
Site/Facility	Hanford Site/Plutonium Finishing Plant			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	C. J. Simiele (509) 373-1519			Local DOE Contact Phone		J. E. Spets (no phone provided)			
Originator Phone	C. P. Ames (509) 376-6377			Contractor		Project Hanford Management			
<p><b>Description:</b> It was discovered that under certain conditions for a postulated accident, there is the potential for contaminated air to bypass a HEPA filter inlet seal, enter the filter frame air space, travel through that air space between filter rooms through the S-10 duct, exit through an outlet filter seal, and escape out the PFP ventilation stack. The existing accident analysis assumed that there would be no such bypass. This situation was first self-identified as a potential safety analysis issue and after prompt but extensive review, including exploring several possible scenarios and reviewing available filter performance information by the contractor safety staff, was declared to be a positive USQ.</p> <p>The reasoning for Cause Code assignment is somewhat subjective, but it was felt that recognition of new of additional chemical and physical properties is the best description.</p>									
<p><b>Contractor Action:</b> A number of specific procedural steps, e.g. changes in limiting conditions of operation, to require termination of operations if an alternative HEPA flow cannot be maintained, were begun.</p> <p>A recovery plan was established to perform additional filtration tests and assure a tight seal on filters.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b> A Corrective Action (Tracking ID: CARF 20060168) was established. The estimated completion date is July, 2006.</p>			
<p><b>DOE Field Office Action:</b> RL will review the corrective actions and revised safety basis documentation and modify the Safety Evaluation Report.</p>						<p><b>All CA Status:</b> There should be a comprehensive lessons learned report prepared with appropriate actions required to assure filter performance during accidents.</p>			
<p><b>EH-23 Assessment:</b> Cause: Unanalyzed material properties. The Corrective Action appears acceptable.</p>									

ORPS ID Status	EM-RL-PHMC-PFP-2006-0005 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Under-estimation of Dose Consequences for Accidents in 2736-Z Safety Basis Stored in 3013 Containers			Date and Time Discovered		2/09/06 14:20 (PTZ)			
Site/Facility	Hanford Site/Plutonium Finishing Plant (PFP)			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	C. J. Simiele (509) 373-1519			Local DOE Contact Phone		J. E. Spets (no phone provided)			
Originator Phone	C. P. Ames (509) 376-6377			Contractor		Project Hanford Management			
<p><b>Description:</b> A review of technical information for the PFP Interim Safe Storage Facility revealed that more than one per cent of PFP's 3013 Containers hold more fissile material than allowed for in the 2736-Z complex Safety Basis. This was self-identified during a review of other information. The existing documented safety analysis assumed that the maximum amount of material stored in a 3013 Contained, e.g. 4400 grams of fissile material, would be limited to less than the volume available, because of other safety concerns. However, in practice some of the containers were filled to a fuller capacity since it was physically possible to do so.</p> <p>There does not appear to be any immediate danger, and appropriate steps were taken to correct this oversight.</p>									
<p><b>Contractor Action:</b> The appropriate changes to the Documented Safety Analysis/Technical Safety requirements were transmitted to DOE-RL.  Other actions included appropriate lessons learned follow up.</p>							<p><b>Safety Basis Document Corrective Actions (CA):</b> A total of six actions were assigned to Tracking ID CARF 20060181, scheduled to be completed in August 2006.</p>		
<p><b>DOE Field Office Action:</b> RL will review the corrective actions and modify the Safety Evaluation Report.</p>							<p><b>All CA Status:</b> Revised SER should be completed in August.</p>		
<p><b>EH-23 Assessment:</b> Cause: Unanalyzed material inventory. The Corrective Action appears acceptable.</p>									

ORPS ID Status	EM-RL-PHMC-PFP-2006-0007 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B3
Title	Configuration of BTC/3013 Container Storage in Fixed Array Wagons Not Properly Analyzed in Safety Basis			Date and Time Discovered		2/22/06 12:30 (PTZ)			
Site/Facility	Hanford Site/Plutonium Finishing Plant (PFP)			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	C. J. Simiele (509) 373-1519			Local DOE Contact Phone		S. L. Trine (no phone provided)			
Originator Phone	C. P. Ames (509) 376-6377			Contractor		Project Hanford Management			
<p><b>Description:</b> Radioactive material stored in 3013 containers under certain conditions stick up too high above the rim of position holding cylinders in Fixed Array Wagons. Coupled with assumptions in the documented safety analysis, including a postulated fire, reveal some accident scenarios might be non-conservative. The documented safety analysis must be revised.</p> <p>A deficiency in configuration management was identified as the principal cause.</p>									
<p><b>Contractor Action:</b> The first and most important action is to re-analyze dose consequences using the correct cylinder height.</p> <p>Reanalyze the documented safety analysis.</p> <p>Prepare a lessons learned plan.</p>							<p><b>Safety Basis Document Corrective Actions (CA):</b> A total of six actions were assigned to Tracking ID CARF 20060237, scheduled to be completed in June 2006.</p>		
<p><b>DOE Field Office Action:</b> RL will revise the Safety Evaluation Report.</p>							<p><b>All CA Status:</b> Revised SER should be completed in June.</p>		
<p><b>EH-23 Assessment:</b> Cause: Safety program deficiencies. The Corrective Action appears acceptable. A lot of thought has gone into the assessment regarding possible accident implications.</p>									

ORPS ID Status	EM-RL-PHMC-REMACT-2006-0002 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Positive Unreviewed Safety Question at 118-K-1 for Handling Drummed Waste			Date and Time Discovered		3/27/06 10:01 (PTZ)			
Site/Facility	Hanford Site/100 Area			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	R. Donohoe (509) 373-6230			Local DOE Contact Phone		J. Waring (no phone provided)			
Originator Phone	Stephen J. Foster ( 509) 372-9117			Contractor		Project Hanford Management			
<p><b>Description:</b>  Washington Closure Hanford, Inc. (WCH), project personnel completed the Documented Safety Analysis for the Remediation of the 118-K-1 Solid Waste Burial Grounds (DSA), which in part A Potential Inadequacy in the Safety Analysis was declared after facility personnel discovered that the frequency analyses for two drum shipment payloads (Payloads 5 and 6) in the 100 and 200 Areas were based on the wrong Transportation Safety Document's bounding frequency values. Subsequently, appropriate compensatory measures were taken and an Unreviewed Safety Question Evaluation was initiated and determined to be positive.</p>									
<p><b>Contractor Action:</b>  Complete USQ determination.</p>							<p><b>Safety Basis Document Corrective Actions (CA):</b>  Few details to report. Updated next quarter.</p>		
<p><b>DOE Field Office Action:</b>  RL will revise the Safety Evaluation Report.</p>							<p><b>All CA Status:</b>  Just starting.</p>		
<p><b>EH-23 Assessment:</b> Cause: Unanalyzed material inventory. Actions underway.</p>									

ORPS ID Status	EM-RL-PHMC-REMACT-2006-0003 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Positive Unreviewed Safety Question at 118-K-1 for Exposure Hazards			Date and Time Discovered		3/30/06 12:36 (PTZ)			
Site/Facility	Hanford Site/100 Area			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	R. Donahoe (509) 373-6230			Local DOE Contact Phone		J. Waring (no phone provided)			
Originator Phone	Steven J. Foster (509) 372-9117			Contractor		Project Hanford Management			
<p><b>Description:</b>  Washington Closure Hanford, Inc.(WCH), project personnel completed the Documented Safety Analysis for the Remediation of the 118-K-1 Solid Waste Burial Grounds (DSA), which in part addresses an unshielded exposure of a worker to a Cobalt-60(Co-60)source with a total activity equal to 512 curies (Ci). Based on preliminary gamma logging data obtained from newly emplaced probe holes at the burial site, Co-60 sources with a total inventory significantly larger than this amount may be in close proximity to one another. As a result, accidental worker exposure could significantly increase. Based on this analysis, a Potential Inadequacy of the Safety Analysis (PISA) exists. No work has started in the 118-K-1 remedial action site at this time.</p>									
<p><b>Contractor Action:</b>  Complete USQ determination.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Actions just begun. Will be reported in next quarter.</p>			
<p><b>DOE Field Office Action:</b>  RL will revise the Safety Evaluation Report.</p>						<p><b>All CA Status:</b>  Just underway.</p>			
<p><b>EH-23 Assessment:</b> Cause: Unanalyzed material inventory. The Corrective Action appears acceptable.</p>									

ORPS ID Status	EM-RL-PHMC-SWOC-2006-0001	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Positive Unreviewed Safety Question Related to Volatile Organic Compounds in Retrieved Waste Drums			Date and Time Discovered	3/30/06 12:30 (PTZ)				
Site/Facility	Hanford Site/200 West			DOE Secretarial Office	Environmental Management				
Facility Manager Phone	Barry V. Burrow (509) 372-3231			Local DOE Contact Phone	D. H. Spleth (509) 373-7827				
Originator Phone	M. Elizabeth Poole (509) 373-0522			Contractor	Project Hanford Management				
<p><b>Description:</b>  A similar event was discovered at the Savannah River Site regarding inadequacies in certain controls in volatile organic compounds (VOC) that led to a conclusion that the documented safety basis may have been inadequate. Although most of the facilities at Hanford site were reviewed and found to be in agreement with the existing safety basis documents, the current VOC re-evaluation concluded that suspect-transuranic waste in older burial grounds, (e.g., retrievably stored in the early 1970s) does not always have container-specific storage records.</p>									
<p><b>Contractor Action:</b>  Complete USQ determination.</p>							<p><b>Safety Basis Document Corrective Actions (CA):</b>  Actions just begun.</p>		
<p><b>DOE Field Office Action:</b>  RL will revise the Safety Evaluation Report.</p>							<p><b>All CA Status:</b>  Just underway.</p>		
<p><b>EH-23 Assessment:</b> Cause: Unanalyzed material inventory. Just underway.</p>									

ORPS ID Status	EM-SR--WSRC-CLAB-2006-0001 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Inadequacy of Documented Safety Analysis			Date and Time Discovered		1/17/2006 @ 12:35 ETZ			
Site/Facility	Savannah River Site, F-Area Central Laboratories (772-F& 772-1F)			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	Mr. K. W. Atkinson, (803) 952-2500			Local DOE Contact Phone		Mr. William H. Barnette, (803) 952-2406			
Originator Phone	Mr. Gerald Stallings, (803) 952-3247			Contractor		Westinghouse Savannah River Company			
<p><b>Description:</b>  The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in glove boxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glove box had not been determined.</p> <p>On 1/27/06 Positive USQ was issued.</p> <p>This event was discovered during the follow-up to Report EM-SR--WSRC-LTA-2006-0003 which describes the discrepancy at the Savannah River National Laboratory</p>									
<p><b>Contractor Action:</b>  A walk down of facility glove boxes found no flammable/combustible liquids in the 772-F or 772-1F glove boxes.</p> <p>Notifications were made.</p> <p>Facility personnel instructed to not introduce such materials (SRS hazard rating of 2 or greater) into glove boxes until this PISA is resolved.</p> <p>Barricades were erected around glove boxes where combustible or flammable liquids/gels were found following Additional reviews.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Complete the Consolidated Hazard Analysis (CHA) review for F/H Laboratory and incorporate changes, as warranted, to ensure Safety Basis documentation is in compliance.  Target Completion Date: 08/31/2006  Tracking ID: 2006-CTS-000764, CA #4</p>			
<p><b>DOE Field Office Action:</b>  No local DOE assessment. HQ included a brief assessment which repeated the existing description.</p>						<p><b>All CA Status:</b>  Corrective Action closure will be tracked.</p>			
<p><b>EH-23 Assessment:</b> Cause: A2, unanalyzed material inventory. Discovery of hazardous material not identified in the DSA. Corrective action details lacking. Status will be tracked.</p>									

ORPS ID Status	EM-SR--WSRC-LTA-2006-0003 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	See Description below.			Date and Time Discovered	01/24/2006 @1600 ETZ				
Site/Facility	Savannah River Site, Savannah River National Laboratory			DOE Secretarial Office	Environmental Management				
Facility Manager Phone	Mr. Edward Selden (803) 725-9713			Local DOE Contact Phone	Ms. Linda Quarles, (803) 725-7726				
Originator Phone	Mr. Richard Dermody, Jr., (803) 725-3113			Contractor	Westinghouse Savannah River Company				
<p><b>Description:</b>  Title: Potential Inadequacy in the Safety Analysis-Flammable Liquids as a Potential Source for a Deflagration of Radioactive Glove boxes.</p> <p>The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in glove boxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glove box had not been determined.</p> <p>On 2/8/06 Positive USQ SRT-USQ-06-0020 was issued.</p>									
<p><b>Contractor Action:</b>  The use of class I flammable liquids have been prohibited in glove boxes.</p> <p>An inventory of flammable liquids and conditions was initiated for safety significant glove boxes.</p> <p>Further corrective actions will be identified as a result of the inventory.</p>							<p><b>Safety Basis Document Corrective Actions (CA):</b>  Final evaluation due date is 04/28/06.</p> <p>Other actions not listed, but are being tracked in the Site Tracking, Analysis and Reporting System (STAR)</p>		
<p><b>DOE Field Office Action:</b>  No local DOE assessment. HQ included a brief assessment which repeated the existing description.</p>							<p><b>All CA Status:</b>  Yet to be developed. They will be followed.</p>		
<p><b>EH-23 Assessment:</b> Cause: unanalyzed material inventory. Corrective action details lacking. Status will be tracked.</p>									

ORPS ID Status	EM-SR--WSRC-SW&I-2006-0001 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Legacy TRU Waste Drums Exceed Fissile Gram Equivalent Limit			Date and Time Discovered		01/31/06 @ 19:50 ETZ			
Site/Facility	SRS, Solid Waste and Infrastructure			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	Mr. Ken Harrawood (803) 208-8544			Local DOE Contact Phone		Mr. Mike Villanueva, (803) 208-8329			
Originator Phone	Mr. Robert W. Stone, (803) 557-9255			Contractor		Westinghouse Savannah River Company			
<p><b>Description:</b>  On 1/31/06 a transuranic waste drum containing 681 grams equivalent Pu-239 dated 1980 was discovered in storage in a category III facility (maximum allowed is 485 grams. The drum also was not stored with spacing required for the Pu-239 content. On April 18, 2006 a second drum containing 1156 equivalent grams of Pu-239 was discovered, also improperly stored.</p> <p>Use of measurement equipment incapable of measuring these material quantities was determined as the cause.</p> <p>This report has been updated four times to include discovery of the second drum, upgrade of report from Cat. 3 to Cat. 2 because of a positive USQ determination, and to include storage in a class III facility as a PISA. As a result cause codes have changed from 3B(1) to 3A(2) to 3B(@).</p>									
<p><b>Contractor Action:</b>  Expert analysis was immediately performed; drums were roped off a tagged. Notifications were made. Drum was not moved because of the need for analysis to prevent potential criticality.</p> <p>On 4/18/06 Analyses were completed by Savannah River National Laboratory. Results: drum 1 contains 114.4 equivalent grams Pu-239; drum 2 contains 1156 equivalent grams Pu-239.</p>						<p><b>Safety Basis Document Corrective Actions (CA):</b>  Final evaluation due 5/1/2006.</p> <p>Other actions not listed, but are being tracked in the Site Tracking, Analysis and Reporting System (STAR)</p>			
<p><b>DOE Field Office Action:</b>  No local DOE assessment. HQ included a brief assessment which repeated the existing description.</p>						<p><b>All CA Status:</b>  Yet to be developed. They will be followed.</p>			
<p><b>EH-23 Assessment:</b> Cause: unanalyzed material inventory. Corrective action details lacking. Status will be tracked.</p>									

ORPS ID Status	EM-SR--WSRC-SW&I-2006-0004 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A7
Title	New Analysis of Aircraft Crash Frequency (Positive USQ)			Date and Time Discovered		03/09/2006 @ 14:45 EST			
Site/Facility	SRS, Solid Waste and Infrastructure			DOE Secretarial Office		Environmental Management			
Facility Manager Phone	Mr. Ken Harrawood (803) 208-8544			Local DOE Contact Phone		Mr. Mike Villanueva, (803) 208-8329			
Originator Phone	Mr. Robert W. Stone, (803) 557-9255			Contractor		Westinghouse Savannah River Company			
<b>Description:</b> The facility accident analysis did not consider the potential for a small aircraft crash, which does not comply with the requirements of DOE-STD-3014.96.									
<b>Contractor Action:</b> New Information Report NI-SWMF-06-002 was issued.  On March 28, 2006 approved USQ-SWE-2006-0069, Discovery USQ PI-06-0005, Aircraft impact frequency discrepancies, which upgraded this event to significance category 2.						<b>Safety Basis Document Corrective Actions (CA):</b> Final evaluation due date not included.  Other actions not listed, but are being tracked in the Site Tracking, Analysis and Reporting System (STAR)			
<b>DOE Field Office Action:</b> No local DOE assessment. HQ included a brief assessment which repeated the existing description.					<b>All CA Status:</b> Yet to be developed. They will be followed.				
<b>EH-23 Assessment:</b> Cause: Unanalyzed Accident. Corrective action details lacking. Status will be tracked.									

**Appendix B**  
Status of Open USQs

**Appendix B: Status of Current Positive USQ Occurrences Including ORPS Reports Closed During January-February-March 2006  
And New Declarations**

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
March 2004	Idaho National Engineering Lab/Advanced Test Reactor	NE-ID--BBWI -ATR-2004-0004 Core Feedback During Loss of Commercial Power Update:2-21-2006	<p>Occurrence Report No. 15 USQ No: RTC-USQ-2005-685 Discovered: February 9, 2006, 0936 Categorized: February 9, 2006</p> <p>A quantitative analysis of the potential for an operator error resulting in closing the valve to the stop was performed to support the process control system upgrade project (TRA-ATR779, Revision 2 and TRA-ATR-786). These analyses conclude the frequency of an operator error resulting in inadvertent closure of the flow valve to the stop was 7E-03/year which is consistent with an unlikely or Condition 3 category. The event is considered as a Condition 4 event in SAR-153. Condition 4 events have a lower frequency of occurrence than Condition 3.</p> <p>SAR-153, Section 15.3.4 does not refer to the analyses in TRA-ATR-779 and TRA-ATR-786 that are the design basis of the existing ATR process control system. TRA-ATR-786 is a reference to Section 15.5, Increase in Primary Coolant Inventory. SAR-153 does not justify lowering the frequency for inadvertent closure of the valve due to operator error from Condition 3 determined in TRA-ATR-786 to Condition 4.</p> <p>SAR-153 does refer to an analysis (TRA-ATR-839) that supports classifying mechanical failure of the flow control valve as Condition 4. The analysis in TRA-ATR-839 determines stresses in various components resulting from the expected maximum differential pressure to estimate the likelihood of valve failure. The analysis does not address fatigue failure which would be a credible failure mode for the valve. However, review of NRC databases and the operation history of the ATR secondary coolant system butterfly valves indicate that the failure of the BF-A-1-14 valve is at least a Condition 3 fault. The typical approach in assessing component failure frequency is to use an industry experience failure database 15.7 and 15.12. The methodology used for the derivation of the set point could allow higher off-site doses than predicted by the radiological consequence analyses. Since these radiological consequence analyses are the basis upon which DOE approved operation of the ATR, the discrepancy represents a potentially inadequate safety analysis.</p>

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
April 2004	Los Alamos National Laboratory/ LANL	ALO-LA-LANL-LANL-2004-0007 Inadequate Documented Safety Analysis Concerning Type A Designated Packaging used for Fissile Content Update: 07/01/2004	05-13-04: The reporting criteria was upgraded from 3B (2) to 3B (1), i.e., the positive USQD was declared.  Last update 7/1/04. All corrective actions are completed by 6/15/05.
September 2004	Los Alamos National Laboratory/ Plutonium Proc & Handling Fac	ALO-LA-LANL-TA55-2004-0009 Modification to TA-55 Fire Detection System Results in Positive Unreviewed Safety Question Update: 2-18-2005	Add Second Fire Alarm Wiring Path. Add a second path for fire alarm transmission to the GAS through concentrator 009 in PF-3. Responsible Group/Division FM-TA-55. Target Completion Date: 7-15-05 Completion Date: 04/20/2005  Reconnect PF-10 and PF-11 Fire Alarms to FCS. Use the second wiring path to reconnect the PF-10 and PF-11 fire alarms to the FCS Responsible Group/ Division FM-TA-55. Target Completion Date: 7-15-05 Completion Date: 4-20-2005
October 2004	Lawrence Livermore National Lab./ Lawrence Livermore Nat. Lab. (BOP)	NA-LSO--LLNL-LLNL-2004-0053 Potential Inadequacy in the Bldg. 332 Safety Analysis Final: 1-10-2006	Latest Update: 04-14--06 The USQD has been completed and it is positive with a Significance Category of 2. This will change the categorization of the OR to Group 3. The USQD was done in response to the PSIA that was filed. A letter was sent to LSO on 1/7/05 informing of the results of the USQD. The USQD revision due date was extended from 2/27/06 to 4/14/06.  To date, all check valves and pressure control valves were identified during system walk down in august 2005. The identified check vales have been replaced or inspected and meet the requirements of NEPA 25, or isolated from the Fire suppression system. In addition, a work instruction was developed to inspect/replace check valves at regular intervals as proposed in the B332 DSA submittal of 12/19/05.
July 2005	Idaho National Laboratory/ Zero Power Physic Reactor	NE-ID--BEA-ZPPR-2005-0001 Potentially Inadequate Safety Analysis Relative to the Seismic Qualifications in the ZPPR Vault  Final 3-29-2006	Finalization of this report was initially delayed in anticipation that a contract would be issued and the evaluation completed to support accurate classification of the event. Difficulties encountered in the procurement process for this contract have postponed delivery of the seismic evaluation. Also, initial discussion between BEA and the contractor have identified that the evaluation will need to be completed in phases where decisions regarding path forward will need to be made based on findings. This realization has made it impractical to determine with certainty when the evaluation is likely to be completed. In order to not further delay the final report, and based on the uncertainty mentioned above, a seismic evaluation completion date of 4/30/2007 has been estimated.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
August 2005	ORNL Buildings 3029 and 3026D	EM-ORO--BJC-X1OWSTEMRA-2005-0007. As-Found Radiological Condition in ORNL Buildings 3029 and 3026D Affecting characterization. Update: 3/24/06	UPDATE 03/24/2006: Additional time is needed to complete the corrective action plan to address and incorporate the root cause analysis and corrective action plan for the programmatic issue NTS-ORO-BJC-BJCPM-2005-0004 (Legacy Conditions in Facilities Awaiting D&D Result in Inadequate Safety Bases). Update: 9-28-2005: This report is being updated to provide additional time to complete the corrective action plan. The causal analysis has been completed and this occurrence is part of a programmatic issue with the adequacy of adopted safety basis documents for other industrial and Radiological Facilities where conditions are being discovered during physical characterization activities that exceed existing safety basis thresholds. The final occurrence report will be issued by 3-31-2006.
September 2005	Idaho National Laboratory/ Advanced Test Reactor	NE-ID--BEA-ATR-2005-0008 Hazard Analysis for Secondary Chemical Addition System, TRA-671 Update: 1-11-06	Identification of this inadequacy in the safety basis underscores a number of items. First is the need to have a robust and ongoing program for verification of assumptions in relation to system design and accident analysis. Second is the need for supporting analysis documents that identify issues (e.g., issues with the mixing of incompatible chemicals) to ensure that those issues are completely addressed in relation to their consequences. Third is that safety analysts must be cognizant of the larger picture of interactions of different consequences as it relates to accident scenarios. In this instance, a seismically induced leak of incompatible chemicals had consequences that were not considered in relation to impact to mitigative operator actions required upon a loss of coolant accident (LOCA) induced by the same seismic event.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
September 2005	Savannah River, S-Area, Defense Waste Processing Facility (WVIT/DWPF) 221-S	SR--WSRC-WVIT-2005-0019, Positive Unreviewed Safety Question Declared Due To Use Of Non-Conservative H2 Generation Rate.	<p>Update Issue. 07-26-05: Site New Information NI-SITE-05-003 identified a potential non-conservatism in the calculation of radiolytic hydrogen generation rate due to failure to address all applicable radionuclide daughter products. An evaluation of the DWPF safety basis determined that this problem constituted a Potential Inadequacy in the Safety Analysis (PISA). Calculation S-CLC-S-001 00 Rev. 0. Tracking ID: 2005-CTS-002653 CA # 1 - 5. Target Completion: 1/01/2005 (latest).</p> <p>10/11/2005: The Defense Waste Processing Facility declared a positive Unreviewed Safety Question (USQ) as a result of the evaluation of the potential inadequacy of the documented safety analysis.</p> <p>Status: Awaiting completion of CA</p> <p>11/22/2005: Report updated to include 1) Results of a causal analysis to learn why one isotope (Ba-137m) was not included in the existing hydrogen generation analysis. 2) Identify corrective actions to correct the analysis and to change guidance review and training to prevent future occurrences of this oversight, 3) Cancel the need for further evaluation prior to closing the report (based upon completion of the causal analysis and identification of corrective actions required) and 4) document the November 22, 2005 approval of report and actions taken by the facility manager.</p> <p>4/27/2006: Report remains open pending completion of corrective actions.</p>

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
October 2005	Portsmouth Gaseous Diffusion Plant. X-745E and C-745T UF6 Cylinder Storage Yards	EM--PPPO-UDS-PORTDUCON-2005-0003 Determination of a Positive Unreviewed Safety Question (USQ) for the Portsmouth, OH and Paducah, KY Uranium Hexafluoride (UF6) Cylinder Yards. Final 4/28/06	The USQ concerns the possible presence of phosgene, a chemical warfare agent, in Model 30A cylinders that were acquired from the U.S. Army's Chemical Warfare Service during the 1940's. Workers at the Storage Yards were briefed on the potential presence and hazards of the phosgene. Model 30A cylinders will not be moved, pending results of the Unreviewed Safety Question process. Incomplete.
November 2005	Hanford Site/ Plutonium Finishing Plant	EM-RL--PHMC-PFP-2005-0032 Final Report	Tracking ID: 20051640. All corrective actions being tracked.
November 2005	Hanford Site/ FFTF D&D	EM-RL-PHMC-FFTF-2005-2007 Final Report	All actions complete.
November 2005	Los Alamos National Laboratory/ Pajarito Laboratory	NA--LASO-LANL-TA18-2005-0007 Positive USQ - Audible neutron counters listed as a control in BIO but not in TSR Cancelled on 02/13/06	The PISA was invalidated, and the USQ was cancelled from the ORPS database.
November 2005	Pantex Plant/Pantex Plant	NA--PS-BWXP-PANTEX-2005-0120 Staging Facility Temperature Rate of Rise – PISA Final: 04/12/2006	A JCO has been initiated.
November 2005	Pantex Plant/Pantex Plant	NA--PS-BWXP-PANTEX-2005-0131 Positive USQ, SS-21 Hazard Analysis Report (HAR) Final: 02/24/2006	No actions or compensatory measures were taken because no operations were/are being conducted under this SS-21 HAR. Final ORPS report is scheduled
December 2005	Pantex Plant/Pantex Plant	NA--PS-BWXP-PANTEX-2005-0142 Specific Surge Suppression Arrangements found Ineffective through testing (Positive USQ) Update: Revision 5 on 04/28/2006	Appropriate operations were suspended in the three facilities until JCO is written and compensatory measures are in place.  Out of 4 CAs, 2 are complete; others have due dates on 05/12/2006 and 08/01/2009.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
December 2005	ORNL Transuranic Storage Facilities	EM-ORO--BJC-X10WSTEMRA-2005-0010. Potential USQ Concerning the Analysis of a Container Deflagration Event in Bechtel Jacobs Company (BJC) Transuranic (TRU) Storage Facilities. Update 4/24/06	A potential Unreviewed Safety Question (USQ) was identified concerning the safety basis analysis of a container deflagration event in the Transuranic (TRU) Waste Storage Facilities. The current safety basis for these facilities documents storage, receipt, shipment, and over-packing as approved activities. Spontaneous combustion and container over-pressurization events are analyzed, but a deflagration event is not specifically addressed. Movement of unvented drums has been limited, notifications have been made, and an USQ determination has been initiated.
December 2005	Oak Ridge Operations. TRU Waste Processing Facility	EM-ORO--FWEC-TRUWPFAC-2005-0002. Pressurized gas cylinders used in HSGS analysis of waste drums not included in safety analysis. Update.	Nuclear Safety personnel identified a Potentially Inadequate Safety Analysis condition after discovering that the hydrogen gas cylinders used for Head Space Gas Sampling operations were not considered in the DSA accident analysis. A preliminary safety evaluation was performed which determined that there was no resulting increase level of risk, therefore no immediate actions were required. An Unreviewed Safety Question Determination was initiated.
December 2005	East Tennessee Technology Park. K-25 Building	EM-ORO--BJC-K25ENVRES-2005-0031. Potential Inadequate Safety Analysis Associated with the Relocation of Tenant Operations. Update:	K-25 personnel identified a Potentially Inadequate Safety Analysis (PISA) condition following the relocation of a tenant's operations from the K-1 037 to the K-1036 facility that potentially increases the hydrogen explosion hazard beyond what was considered within the K-25 Documented Safety Analysis. The relocation of the tenant's operation now places a 3,000gallon hydrogen storage tank within approximately 500 feet of the K-25 Building. Compensatory actions and a PISA have been initiated. Further evaluation pending.
December 2005	Idaho National Laboratory/ICPP Fuel Receipt & Storage Act	EM-ID--CWI-FUELCSTR-2005-0008 Potential Inadequacy in the Safety Analysis (PISA), SAR-126 Final: 2-21-2006	On 1/4/2006, at 1424 hours, the PISA determination for hydrogen generation in CPP-666 FDP drums is positive (USQ-3075, Radiolysis in Drums Containing HEPA Filters). A Long Term Order is already in place suspending any and all drum handling within the FDP cell while the PISA determination was being completed. The annual update to SAR 126 is with DOE for approval and contains the controls necessary to prevent this event. The Long Term Order restricting drum handling will remain in place until the annual update to SAR 126 is implemented. Based on a positive USQ determination this has been upgraded to a significance category 2 event. The CPP-666 Fluorinel Dissolution Process (FDP) cell at CPP-666 is used to store HEPA filters from the "Cell Off Gas" (COG) and "Dissolver Off Gas" (DOG) ventilation systems. These filters are radioactively contaminated and may contain water so that radiolysis may occur. Radiolysis is the dissociation of water caused by radioactive decay. Some of these dissociation products are gaseous and flammable and could potentially pressurize the filter storage container or ignite. The calculated hydrogen content within a 55-gallon filter drum is 7%. This exceeds the 4% minimum flammability limit but is well below the 20% minimum detonation limit. This calculation is conservative because all but one of the drums contained many fewer filters than estimated here, significantly reducing the radioactive source, and only a few filters contained silica gel, and possibly high levels of water because of adsorption of water from the cell air.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
December 2005	Idaho National Laboratory / INL LABS	NE-ID--BEA-INLLABS-2005-0003 PISA Insufficient Analysis of Hoisting and Rigging Accident Scenario Final: 1-25-2006	This occurrence will require a change to the DSA. Industrial safety practices were being followed including adherence to company policies involving hoisting and rigging. The DSA will need to include a more detailed description of adherence to these policies. The specific issue will be addressed in the annual update to the DSA (see DR 39243) and a more detailed look at these issues in general will be addresses in NTS BEA-FMF-2005-0001.
January 2006	Paducah Gaseous Diffusion Plant/ 0-404 Burial Ground	EM--PPPO-BJC-PGDENVRES-2006-0001 Positive Unreviewed Safety Question (USQ) Concerning the 0-404 Low-level Radiological Waste Burial Ground Facility. Final 03/14/2006	Determine from evaluation of data whether materials buried at 0-404 require control under the Nuclear Criticality Safety (NCS) Program and generate appropriate NCS documentation.
January 2006	Hanford Site/100 and 200 Areas	EM-RL-PHMC-GENSERVICE-2006-0001 Positive Unreviewed Safety Question in the Transportation Safety Document. Final Report	Tracking ID CARF 20060035. All actions to be completed by 12/06.
January 2006	Oak Ridge National Laboratory/HFIR	NE-ORO--ORNL-XI0HFIR-20060004 Calculation Error Results in Positive USQ Final 04/03/2006	A preliminary re-evaluation of the subject calculation concluded that with the error corrected, there was an increase in off-site doses, Therefore, the determination was made that an Unreviewed Safety Question (USQ) existed. However, revisiting of any or all of the conservative assumptions (in concert with fixing the analytic error) would likely reduce the probability and consequences of this event even below that currently documented in the USAR.
January 2006	Savannah River, F-Area Central Laboratories (221-F & 221-1F)	EM-SR--WSRC-CLAB-2006-0001, Inadequacy of Documented Analysis. Positive Unreviewed Safety Question	Update/Final Issue: The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in gloveboxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glovebox had not been determined. Target Completion Date: 08/31/2006 Tracking ID: 2006-CTS-000764, CA #4
January 2006	Savannah River, F-Area Central Laboratories (221-F & 221-1F)	EM-SR--WSRC-CLAB-2006-0001, Inadequacy of Documented Analysis. Positive Unreviewed Safety Question	Update/Final Issue: The facility safety analysis considered flammable liquids, such as solvents, as a potential fire hazard in glove boxes, but did not consider them as a deflagration source. The amount of flammable liquid allowed to maintain operation below 25% of the lower flammability limit for a radioactive glove box had not been determined. Target Completion Date: 08/31/2006 Tracking ID: 2006-CTS-000764, CA #4

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
January 2006	Oak Ridge National Laboratory/ BOP, Building 5505	SC-ORO--ORNL-X1ONUCLEAR-2006-0001 Incorrect Application of Radioactive Release Modeling Used in DOE-STD-1027-92 Final 04/04/2006	The inventory of radioactive materials will be restricted to less than 50% of the DOE-STD1027-92 Category 2 threshold quantities. This restriction maintains the potential accident consequences to those identified in the SAR. The Bldg. 5505 inventory is currently less than 50% of the Category 2 threshold.
January 2006	Lawrence Livermore National Laboratory	NA--LSO-LLNL-LLNL-2006-0002 Discrepant-as found Condition – Glove boxes Inadequately Seismically Restrained	Safety evaluation being conducted, scheduled to be complete by 05/28/2006.
February 2006	Los Alamos National Laboratory	NA--LASO-LANL-TA18-2006-0001 Positive USQD regarding correction to Transportation Fire Analysis from BIO Update: 03/24/2006	New calculations are to be performed. Existing ACs requiring robust containers for material-at-risk ensures safety to the public and to workers, and is adequate for continued operation.
February 2006	Los Alamos National Laboratory	NA--LASO-LANL-TA55-2006-0005 TSR Violation at TA-55 and positive USQ: Sprinkler System Degradation at TA-55 Update: 03/08/2006	Degraded sprinkler heads are being replaced (about seven hundred). The reason for suspected lack of annual sprinkler system inspection at TA-55 is being reviewed. Scheduled completion date: 04/21/2006.
February 2006	Idaho National Laboratory/ ICPP Fuel Receipt & Storage Act.	EM-ID--CWI-FUELCSTR-2006-0005  Possible Hydrogen generation in HICs and During Basin Grouting  Update: 2-22-2006	CA 7, Nuclear safety analysis will implement improvements to assure adequate communication between work groups by using the Consolidated Hazards Analysis Process (CHAP) or other acceptable method. This CA addresses the cause code A4B5C04. CA 8, Assess the effectiveness of the corrective actions implemented to improve performance in the preparation of safety analyses. This will be done to determine the effectiveness of the corrective actions to prevent recurrence. after all other corrective actions for this issue are completed. A conservative position is taken but DOE-ID should specifically address the adequacy of the corrective actions and their completions.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
February 2006	Idaho National Laboratory/ ICPP Fuel Receipt & Storage Act	EM-ID--CWI-FUELRCSTR-2006-0004 CPP-666 Controls on Fuel Handling and Repackaging Stand Use Update, 2-14-2006	CA 11, As specified in the ESS-FSA-3, Follow-on Actions, "Conduct a detailed process evaluation of all fuel movement activities in the FSA pool using a disciplined methodology to assure that the work scope needed to support mission commitments is described, associated hazards identified and analyzed, and the required controls developed. SAR-1 13 and TSR-1 13 will then be revised to implement the results of this review. This assessment must be completed and SAR-113 and TSR-113 revisions submitted to DOE-ID within six months after approval of this ESS." Satisfactory conservative action has been taken but the adequacy of the corrective actions should be specifically be determined by DOE-ID.
February 2006	Hanford Site Plutonium Finishing Plant	EM-RL-PHMC-PFP-2006-0004 Plugged Vent Filters May Invalidate Accident Analysis for Bldg 242-Z Final Report	A Corrective Action (Tracking ID: CARF 20060168) was established. The estimated completion date is July, 2006.
February 2006	Hanford Site Plutonium Finishing Plant	EM-RL-PHMC-PFP-2006-0005 Under-estimation of Dose Consequences for Accidents in 2736-Z Safety Basis Stored in 3013 Containers Final Report	A total of six actions were assigned to Tracking ID CARF 20060181, scheduled to be completed in August 2006.
February 2006	Hanford Site Plutonium Finishing Plant	EM-RL-PHMC-PFP-2b06-0007 Configuration of BTC/3013 Container Storage in Fixed Array Wagons Not Properly Analyzed in Safety Basis Final Report	A total of six actions were assigned to Tracking ID CARF 20060237, scheduled to be completed in June 2006.
March 2006	Portsmouth Gaseous Diffusion Plant/X744G	EM--PPPO-LPP-PORTENVRES-2006-0003 Positive USQ on Legacy Excess Uranium Inventory in X-744G Final 04/28/2006	Since this additional uranium inventory is currently stored in X-744G, new consequence calculations have been prepared based on a revised proposed maximum facility inventory of 8.0OE+09 grams of uranium. The higher maximum inventory will allow added flexibility in the event that the DOE would need to transfer additional material to this facility in the future.
March 2006	Los Alamos National Laboratory	NA--LASO-LANL-CMR-2006-0002 Positive USQ; Degraded Sprinkler Heads in the Fire Suppression System Notification: 03/07/206	Further evaluation to be completed by 04/21/2006. Degraded sprinkler heads to be replaced.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
March 2006	Savannah River, Solid Waste and Infrastructure	EM-SR--WSRC-SW&I-2006-0004, New Analysis of Aircraft Crash Frequency (Positive USQ)	Update: The facility accident analysis did not consider the potential for a small aircraft crash, which does not comply with the requirements of DOE-STD-3014.96. Positive USQ-SWE-2006-0069, Discovery USQ P1-06-0005, Aircraft impact frequency discrepancies. Other actions not listed, but are being tracked in the Site Tracking, Analysis and Reporting System (STAR).
March 2006	Hanford Site/ 200 West	EM-RL-PHMC-SWOC-2006-0001 Positive Unreviewed Safety Question Related to Volatile Organic Compounds in Retrieved Waste Drums Update	Corrective actions just begun.
March 2006	Hanford Site/ 100 Area	EM-RL-PHMC-REMACT-2006-0002 Positive Unreviewed Safety Question at 118-K-1 for Handling Drummed Waste Update	Corrective actions just begun.
March 2006	Hanford Site/ 100 Area	EM-RL-PHMC-REMACT-2006-0003 Positive Unreviewed Safety Question at 118-K-1 for Exposure Hazards Update	Corrective actions just begun.

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**Appendix C**  
USQ Safety Basis Document Cause Codes

## Unreviewed Safety Questions (USQs) Cause Codes

Potential Unreviewed Safety Questions (USQs) for a facility arise in situations involving events, discoveries, proposed changes in operations to conduct new tests, experiments, D&D, changes in or removal of existing equipment or equipment specifications or introducing new equipment etc., each of which may have safety implications that either are not addressed or are inadequately addressed in the facility's documented safety analysis (DSA), such as: SAR (including SER), BIO, JCO, etc. Any of these situations would trigger a USQ determination process.

Naturally, for a facility without any DSA, virtually every proposed activity in the facility with the potential for an accident constitutes a USQ situation.

There are mainly two types of USQ situations as indicated below:

- A. Potential new accident scenarios that are not analyzed in the DSA
- B. Potential accident scenarios that are not fully analyzed in the DSA and may have
  - potentially higher likelihood of occurring or
  - potentially higher consequences from occurrence of the accident than those estimated in the DSA.

In the following tables, a compilation of causes for the potential USQ situations is developed. A code is assigned to each of these causes for simplicity of tracking.

**Table 1: Type A USQs**

Cause Description	Assigned Code
<b>Nonexistent DSA</b>	A1
<b>Discovery of certain radioactive or other hazardous material in the facility inventory that may cause an event scenario with potential for a radiological release that is not analyzed in the DSA</b>	A2
<b>Recognition of chemical and physical properties of radioactive or other hazardous material in the facility inventory that may cause an event scenario with potential for a radiological release that is not analyzed in the DSA</b>	A3
<b>Mission or procedure change during facility operations or change to facility itself which is not addressed in the DSA</b>	A4
<b>Proposed change in the equipment specifications, removal of equipment, or introduction of new systems or equipment into the facility for change in mission, activity or operating procedure, such as during D&amp;D, new experiments, tests, etc.</b>	A5
<b>Inadequate or missing safety systems or barriers to radioactive material release</b>	A6
<b>Potential accident scenarios missed in the DSA</b>	A7

**Table 2: Type B USQs**

Cause Description	Assigned Code
<b>Accident scenario lacks depth and details: An accident scenario identified in the DSA is not pursued in detail from the initiating event (including its frequency) through: the safety systems response, accident phenomenology and progression, radioactive material behavior, and potential radioactivity release into the work areas inside and to the environment outside of the facility and the consequences of such releases.</b>	B1
<b>Inadequate or flawed analysis (including errors in analysis softwares):</b>	B2.i - xi
i. Seismic, and other natural phenomena and external hazards	
ii. Structural	
iii. Fire	
iv. Criticality	
v. Chemical and/or radiological safety	
vi. Packaging/storage/waste tanks/transportation	
vii. Shielding	
viii. Equipment design, sizing, and qualification specifications	
ix. Airborne exposure pathway to the work areas inside and the environment outside the facility	
x. Liquid exposure pathway to the inside and outside the facility	
xi. Hazards, including explosion, electrical and other	
<b>Deficiencies in programs</b>	B3.i - viii
i. Maintenance (active and passive systems), surveillance, testing, inspection	
ii. Training	
iii. Radiological	
iv. Criticality safety	
v. Fire protection	
vi. Configuration management	
vii. Quality assurance	
viii. Conduct of operation and others	
<b>Equipment malfunction/failure – random failure, maintenance failure (includes safety structure, systems and components, valves, pumps, filters, fans, blowers, resin beds, hardwares, etc.)</b>	B4.i - v
i. Equipment aging, rusting, broken, suspect parts	
ii. Equipment unavailable	
iii. Equipment unreliable	
iv. Equipment out of calibration or alignment (sensors, detectors, meters, CAMs, etc.), interlock non-functional	
v. Others	

**Table 2: Type B USQs  
(continued)**

<b>Incorrect application of Standards, such as STD-1027, STD-3011, STD-3009, DOE-HDBK-3010-94, STD-1120, etc.</b>	B5
<b>Incorrect assumptions in the accident analysis in the DSA</b>	B6.i(a-f) - ii
i. Underestimated source term due to:	
a. Overestimate of credit for packaging/barrier/confinement/waste tank/ESF integrity	
b. Underestimate of Material at Risk (MAR), Damage Ratio, Airborne Release Fraction, Respirable Fraction, Leak Path Factor	
c. Introduction of additional material at risk into, or identification of additional material at risk in the facility, not included in the DSA.	
d. Overestimate of credit for: filter efficiency, clogged filter, saturated resin beds, etc.	
e. Underestimate of spill into the facility or release to the ground or groundwater	
f. Improper binning of source terms, inadequate source term for bounding analysis.	
ii. Underestimate of $\frac{X}{Q}$ and other factors for dose estimates	
<b>Inadequacy of TSR elements that result in undermining or invalidating the assumptions in the DSA</b>	B7.i - ix
i. Safety Limit (SL), Limiting Control Setting (LCS), Limiting Condition of Operation (LCO)	
ii. Interlock configuration, setting, set point, alarm systems.	
iii. Pressure differentials across air- volume compartments for air leakage/flow control.	
iv. Redundancy (established invoking single failure criterion).	
v. Double contingency for criticality safety	
vi. Hazard control/safety systems, system specs, hardwares, operability.	
vii. Administrative controls, surveillance requirements.	
viii. Work procedure.	
ix. Others.	

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Office of Environment, Safety and Health  
**Unreviewed Safety Question Activity Report**  
January – March 2006